

What Is Claimed Is:

1. A canister purge valve for regulating fuel vapor flow between a fuel vapor collection canister and an intake manifold of an internal combustion engine, the canister purge valve comprising:

a body defining a passage extending between a first port and a second port, the first port adapted for fuel vapor communication with the fuel vapor collection canister, and the second port adapted for fuel vapor communication with the intake manifold of the internal combustion engine;

a seat disposed in the passage, the seat defining an aperture having a sealing surface, the sealing surface disposed about a central axis; and

an elastomeric actuator extending through the aperture, the elastomeric actuator being deformable between a first configuration that engages the sealing surface to prohibit fuel vapor flow through the aperture, and a second configuration spaced from the sealing surface to permit fuel vapor flow through the aperture.

2. The canister purge valve of claim 1, further comprising:

a stator;

an electromagnetic coil; and

an armature integrally formed proximate a first end of the elastomeric actuator.

3. The canister purge valve of claim 2,

wherein a second end of the elastomeric actuator is fixed with respect to the body; and

wherein the elastomeric actuator is deformable between the first configuration and the second configuration by energizing the electromagnetic coil to magnetically attract the armature toward the stator and deform the elastomeric actuator in the direction of the central axis.

4. The canister purge valve of claim 3,
wherein the elastomeric actuator defines a cylinder, the cylinder having a first length and a first diameter in the first configuration, the cylinder having a second length and a second diameter in the second configuration; and
wherein the first length is smaller than the second length, and the first diameter is larger than the second diameter.
5. The canister purge valve of claim 4,
wherein a stiffness of the elastomeric actuator increases as an ambient temperature decreases; and
wherein the electromagnetic coil is energized to compensate for the increased stiffness.
6. A valve for regulating fluid flow, comprising:
a body defining a passage extending between a first port and a second port;
a seat disposed in the passage, the seat defining an aperture having a sealing surface, the sealing surface disposed about a central axis; and
an elastomeric actuator extending through the aperture, the elastomeric actuator being deformable between a first configuration that engages the sealing surface to prohibit fluid flow through the aperture, and a second configuration spaced from the sealing surface to permit fluid flow through the aperture.
7. A method of regulating fuel vapor flow between a fuel vapor collection canister and an intake manifold of an internal combustion engine, utilizing a canister purge valve, the valve including a body defining a passage extending between a first port and a second port, the first port adapted for fuel vapor communication with the fuel vapor collection canister, and the second port adapted for fuel vapor communication with the intake manifold of the internal combustion engine, a seat disposed in the passage, the seat defining an aperture having a sealing surface, the sealing surface disposed about a central axis, and an elastomeric actuator extending through the aperture, the method comprising:

engaging the sealing surface with the elastomeric actuator to prohibit fuel vapor flow through the aperture; and

disengaging the elastomeric actuator from the sealing surface to permit fuel vapor flow through the aperture.

8. The method of claim 7, wherein the disengaging the elastomeric actuator includes energizing an electromagnetic coil to magnetically attract an armature toward a stator in the direction of the central axis.

9. The method of claim 8, further comprising energizing the electromagnetic coil to compensate for an increased stiffness of the elastomeric actuator as an ambient temperature decreases.